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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,213	07/17/2006	Yukitane Kimoto	HIP-06-1206	2677

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IP GROUP OF DLA PIPER LLP (US)  
ONE LIBERTY PLACE  
1650 MARKET ST, SUITE 4900  
PHILADELPHIA, PA 19103

EXAMINER
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BLACK, MELISSA ANN

ART UNIT	PAPER NUMBER
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3612

NOTIFICATION DATE	DELIVERY MODE
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10/29/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pto.phil@dlapiper.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,213	<b>Applicant(s)</b> KIMOTO ET AL.	
	<b>Examiner</b> MELISSA A. BLACK	<b>Art Unit</b> 3612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 15-17 and 19-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 15-17, 19-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is in response Amendments and remarks filed on March 4, 2010. Claims 1-6 and 8-23 are pending in the application and rejected as set forth below.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 24-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 29 recites the limitation "said high breaking elongation layer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

4. Claim 30 recites the limitation " said high breaking elongation layer " in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Claim 24 does not have the high breaking elongation limitation.

#### ***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-6, 8-10, 13 and 19-23 rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-264846A in view of JP2003-146252A.

Re Claim 1, JP 2002-264846A discloses an FRP panel for an automobile comprising a panel portion (1, 11, 31, 41, 51, 61, 71) having a first FRP layer (13) on a first surface side and a

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second FRP layer (14) on a second surface side on an opposite side of the first surface (See figures) wherein either of the first and second FRP layers is formed as lower strength FRP layer, and the lower strength FRP layer forms a crushable structure that absorbs impact to a pedestrian during a collision. Re Claims 2, JP 2002-264846A discloses said panel element (1, 11) is an FRP solid plate which is formed integrally with said first FRP layer (13) and said second FRP layer (14). Re Claim 3, JP 2002-264846A discloses wherein said panel element (11) is a panel element which has a space (12) between said first FRP layer (13) and said second FRP layer (14). Re Claim 4, JP 2002-264846A discloses a core material is disposed in said space (12). Re Claim 23, JP 2002-264846A discloses a difference in planar rigidity against external force is provided between said first and second FRP layers by providing a difference in hardness between a surface and a back surface of said core material (see Paragraphs [0009] and [0020]). Re Claim 5, JP 2002-264846A discloses a plurality of panel elements (13, 14) are provided, and a space is formed between adjacent panel elements (See Figures). Re Claim 6, JP 2002-264846A discloses a core material is disposed in said space (12). Re Claim 9, JP 2002-264846A discloses said difference in rigidity is provided by a condition where at least one surface of any one of said first and second FRP layers is formed as a surface having a concave/convex shape (See figures 5, 7-10). Re Claim 10, JP 2002-264846A discloses said surface having a concave/convex shape has a planar shape extending almost straightly (Figures 4 and 5). Re claim 13, JP 2002-264846A discloses wherein said concave/convex shape is provided along an outer circumferential shape of said FRP panel for an automobile (see figure 3). JP 2002-264846A discloses the use of carbon-fiber for reinforcing the panels.

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JP 2002-264846A fails to disclose wherein said difference in rigidity or differences in strength or both are provided by one or two or more differences selected from the group consisting of a difference in amount of reinforcing fibers, a difference in property of reinforcing fibers and a difference in orientation of reinforcing fibers wherein said panel portion is an FRP solid plate formed integrally with said first FRP layer and said second FRP layer and said difference in strength is provided by providing a high breaking elongation layer not containing reinforcing fibers into any one of said first and second FRP layers.

JP2003-146252A teaches a difference in rigidity or differences in strength or both are provided by one or two or more differences selected from the group consisting of a difference in amount of reinforcing fibers, a difference in property of reinforcing fibers and a difference in orientation of reinforcing fibers wherein said panel portion is an FRP solid plate formed integrally with said first FRP layer and said second FRP layer and said difference in strength is provided by providing a high breaking elongation layer (5) not containing reinforcing fibers into any one of said first and second FRP layers.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to use a different fiber with a different rigidity as taught by JP2003-146252A on the device JP2002-264846A in order to change the strength of the panel when and prevent fracturing of the panel when in a collision.

JP2002-264846A further fails to disclose wherein said difference in rigidity is provided by a condition where, with respect to a running direction of said automobile, a main orientation direction of reinforcing fibers of said first FRP layer is in a range of  $\pm 20^\circ$  relative to  $\pm 45^\circ$  disposition, and a main orientation direction of reinforcing fibers of said second FRP layer is in a

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range of  $\pm 20^\circ$  relative to  $0^\circ/90^\circ$  disposition. JP 2002-264846A further fails to disclose said difference in strength is provided by providing a high breaking elongation layer into any one of said first and second FRP layers; said high breaking elongation layer comprises a high breaking elongation resin, and said high breaking elongation resin comprises a thermoplastic resin having a low affinity in adhesion with a matrix resin of said FRP layer; high breaking elongation layer comprises a thermoplastic resin film, a multi-layer laminated film; wherein said difference in rigidity and/or said difference in strength is provided by providing a difference in thickness between said first and second FRP layers.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to change the difference in rigidity or strength by changing the orientation of the fibers and/or putting more fibers in one panel over the other, for it is commonly known in the art of working with carbon fiber. The layers are usually laminated together and the fibers are laid at different angles. As for the breaking elongation, it would have been obvious to one with ordinary skill in the art at the time the invention was made to for thermoplastic resins are well known in the art and changing the composition of them to strengthen or weaken them is well known in the art also, as for the material being laminated, it is common to laminate carbon fiber to strengthen the material. Furthermore these are mere design choices and require little to no skill in the art.

7. Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-264846A as modified by JP2003-146252A in view of US Pat # 7,150,496 to Fujimoto.

JP 2002-264846A as modified fails to disclose a panel plane is sectioned in a lattice-like form into nearly rectangular areas by said concave/convex shape into nearly diamond-shaped

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areas by said concave/convex shape, and wherein said concave/convex shape is provided so as to depict a multiple closed curved line with a nearly concentric analog formation on a panel plane, wherein said concave/convex shape is provided along an outer circumferential shape of said FRP panel for an automobile, wherein said difference in strength is provided by introducing a plurality of discontinuous part of a reinforcing fiber substrate into at least one reinforcing fiber substrate layer of any one of said first and second FRP layers, wherein the discontinuous part extends almost straightly.

Fujimoto teaches the use a panel plane is sectioned in a lattice-like form into nearly rectangular areas by said concave/convex shape into nearly diamond-shaped areas by said concave/convex shape, and wherein said concave/convex shape is provided so as to depict a multiple closed curved line with a nearly concentric analog formation on a panel plane, wherein said concave/convex shape is provided along an outer circumferential shape of said FRP panel for an automobile, wherein said difference in strength is provided by introducing a plurality of discontinuous part of a reinforcing fiber substrate into at least one reinforcing fiber substrate layer of any one of said first and second FRP layers, wherein the discontinuous part extends almost straightly (See Figures 1-10).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to change the shape of the panel plane as taught by Fujimoto on the device of JP 2002-264846A in order to change the energy absorption of the panel during impact, furthermore changing the shape and/or size of an object is considered to be a design choice.

8. Claims 24-28, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-264846A in view of JP2003-311856 A.

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Re Claims 24-28 and 32 JP 2002-264846 A discloses An FRP panel for an automobile comprising a panel portion having a first FRP layer on a first surface side and a second FRP layer on a second surface side on an opposite side of the first surface, wherein either of the first and second FRP layers is formed as a lower-strength FRP layer, and the lower-strength FRP layer forms a crushable structure that absorbs impacts to a pedestrian during a collision, wherein differences in strength are provided by one or two or more differences selected from the group consisting of a difference in amount of reinforcing fibers, a difference in property of reinforcing fibers and a difference in orientation of reinforcing fibers, wherein said panel portion is an FRP solid plate formed integrally with said first FRP layer and said second FRP layer, wherein said panel portion is a panel element which has a space between said first FRP layer and said second FRP layer, wherein a core material is disposed in said space, wherein a plurality of panel portions are provided, and a space is formed between adjacent panel portions (please see above rejection).

JP 2002-264846 A fails to disclose said difference in strength is provided by introducing a discontinuous part of a reinforcing fiber substrate, which is a trigger point for breakage, into at least one reinforcing fiber substrate layer of any one of said first and second FRP layers, wherein a difference in planar rigidity against external force is provided between said first and second FRP layers by providing a difference in hardness between a surface and a back surface of said core material..

JP2003-311856 A teaches said difference in strength is provided by introducing a discontinuous part (2a and b) of a reinforcing fiber substrate, which is a trigger point for breakage, into at least one reinforcing fiber substrate layer of any one of said first and second



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FRP layers, wherein a difference in planar rigidity against external force is provided between said first and second FRP layers by providing a difference in hardness between a surface and a back surface of said core material (for it has the discontinuous part which changes the hardness of the panel).

Re Claim 31 JP 2002-264846 A as modified by JP2003-311856 A fails to disclose the wherein the difference wherein said difference in strength is provided by providing a difference in thickness between said first and second FRP layers, but it would have been obvious to one with ordinary skill in the art at the time the invention was made that the layer could have been different thicknesses since JP 2002-264846 A disclose that the layers may be made of more than one layer, furthermore it is known in the art to change the strength of by making it thicker or thinner.

9. Claims 29 and 30 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-264846A as modified by JP2003-311856 A in view of US Pat # 7,244,501 to Raghavendran.

JP 2002-264846A fails to disclose a high breaking elongation layer comprising a thermoplastic film, multi-layer laminated film.

Raghavendran teaches a laminate with a fiber reinforced layer (32,34) and a thermoplastic resin film (36,40,38) and multiple layers at that (see figure 2).

It would have been obvious at the time, to use the thermoplastic film as taught by Raghavendran on the device of JP 2002-264846A since JP 2002-264846A discloses the use of more than one layer of FRP material in order to change the rigidity of the panel.

***Response to Arguments***

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10. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA A. BLACK whose telephone number is (571)272-4737. The examiner can normally be reached on M-F 7:00-3:30 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Dayoan can be reached on (571) 272-6659. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. A. B./  
Examiner, Art Unit 3612

/Hilary Gutman/  
Primary Examiner, Art Unit 3612